

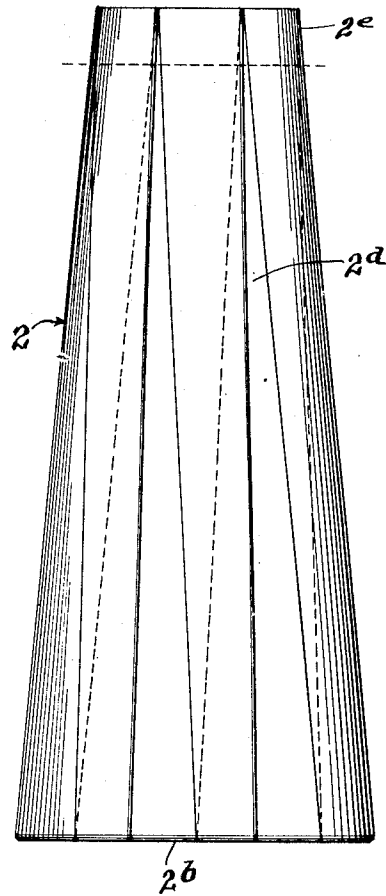
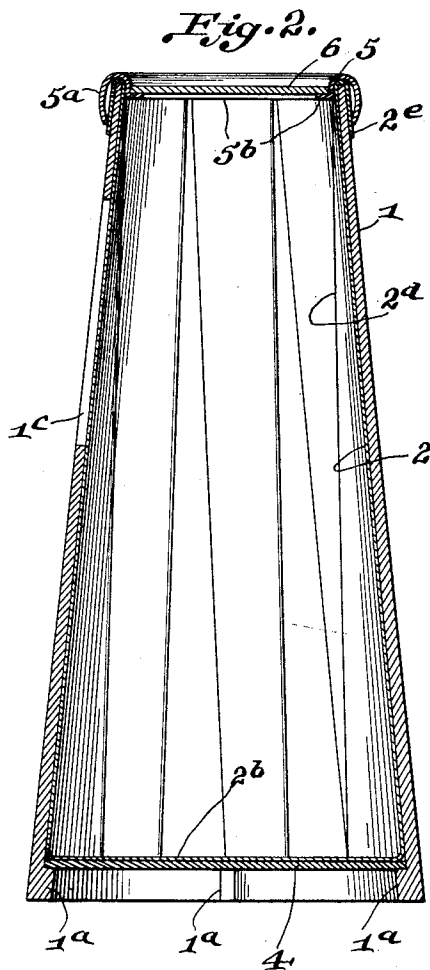
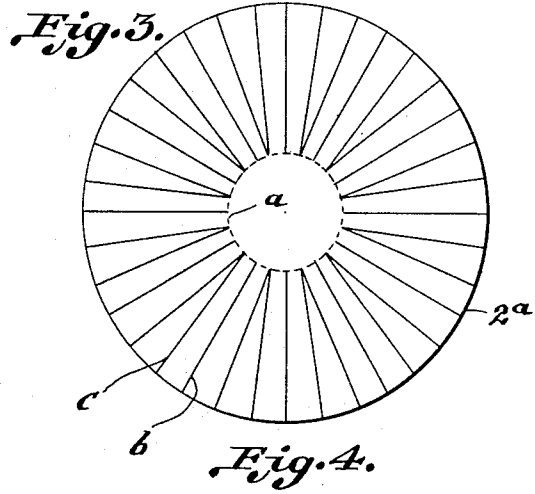
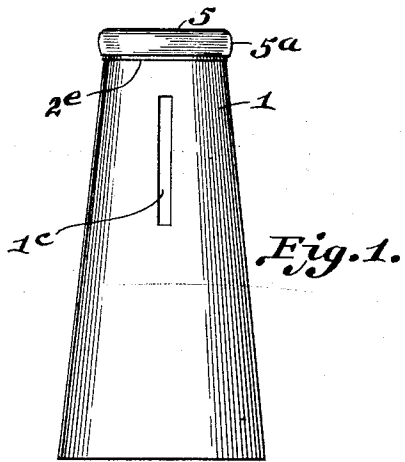
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W. L. WRIGHT

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PAPER BOTTLE AND OTHER CONTAINERS

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PAPER BOTTLE AND OTHER CONTAINERS

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The invention relates to paper bottles and other containers; and the objects and nature of the invention will be understood by those skilled in the art in the light of the following explanations of the accompanying drawing that illustrates what I now believe to be the preferred mechanical expression or embodiment of my invention from among other forms, arrangements, constructions and combinations within the spirit and scope thereof.

An object of the invention is to provide an improved container combination for one time use, in which liquids can be sealed, conveniently and safely handled and delivered.

A further object of the invention is to provide a delivery container for milk and other contents embodying a flexible, liquid-tight bag or inner container provided with a rigid exterior protecting carrier capable of being closed to cover and seal said bag.

With the foregoing and other objects in view, without intending to hereby limit the generic features of the invention to details of a species thereunder, the invention consists in certain novel features in structure, arrangements or combination, as more fully and particularly explained and specified hereinafter.

Referring to the accompanying drawing, forming a part hereof:—

Fig. 1 shows on a reduced scale, a container embodying my invention, in side elevation.

Fig. 2 shows the container of Fig. 1 in vertical section.

Fig. 3 shows in plan, on a reduced scale, a flat paper blank which can be folded to form the flexible liquid carrying bag.

Fig. 4 shows the paper bag in side elevation, before application to the protective carrier.

The container disclosed embodies a rigid or non-collapsible protecting carrier or holder 1, a flexible collapsible liquid-tight bag 2, of thin paper or other thin liquid-proof film-like sheet material suspended from its open end within and enclosed by the carrier, and a clip or other suitable means whereby the upper end of the bag is secured in open position, to and over the upper end of the car-

rier, and preferably, whereby provision is made for closing and sealing the open upper end or mouth of the bag.

The carrier 1 embodies a strong, rigid or stiff open end tube composed of cast or molded paper or like fibrous pulp. Wood or other fibrous pulp is prepared and molded by methods well known to those skilled in the art, to produce hard more or less rigid articles which can be treated to cause the same to resist absorption of liquid and grease.

In the example shown, the molded fibrous pulp tubular carrier 1, is hard, rigid and non-collapsible and is shown in the form of a truncated cone, although I do not wish to so limit all features of my invention as a hard tubular protecting carrier of conical, cylindrical or other formation is within my invention, preferably with the upper end thereof of an approximately standard diameter to permit the use of standard hood caps and flat closure disks as hereinafter described.

Information, instructions, advertising matter and other indicia usually appears on the exterior surface of the protecting carrier, and can be supplied by securing labels thereon, but is preferably permanently molded in the carrier in the form of either raised or depressed characters, etc. to avoid the use of labels and printing.

In the particular example illustrated, the rigid carrier 1, is molded with spaced lugs 1a, projecting inwardly from the inner surface of its lower end, to support a closure disk 4, which can be pressed upwardly into the lower end of the carrier until it snaps past the lugs so as to rest on the upper ends of the lugs and be thereby upheld forming the bottom of the carrier to protect the bottom of the filled bag therein. The disk 4, is more or less resilient and can be molded of wood pulp or can be formed of paper or paper board of the required stiffness and thickness. However, I do not wish to limit all features of my invention to any particular method of or means for applying said bottom closure to the carrier nor for securing or retaining the same, nor, in all instances, to the employment of such disk.

Furthermore, I prefer to produce the carriers without closing their lower ends, so that

the carriers, where conical in shape, can be nested one within the other, to economize space for packing and transportation.

I prefer to form the rigid carrier with an intermediate window 1c, through which the approximately transparent thin sheet material bag of liquid suspended within the carrier can be observed, particularly to observe the cream line where the bag contains milk. This window can be cut radially through the carrier wall or can be molded therein in the process of making the carrier, and is usually in the form of a relatively short narrow longitudinal slot.

The liquid retaining bag 2, is composed of preferably approximately transparent, high grade, more or less thin, flexible paper, such as, so-called parchment paper or thin very strong, light-colored, bleached sulphite paper rendered liquid proof by some suitable method or treatment or other thin liquid-proof film-like sheet material as hereinafter pointed out. This bag is preferably so formed that it can be packed and shipped in flat form, for economy of space, and be capable of folding or of unfolding from the flat form to the operative open-mouth bag form, for assembly with the rigid protecting carrier, as more fully hereinafter set forth.

The bag can be in the form of a so-called flat bottom bag creased to collapse and fold flat and capable of expanding to operative form and composed of a single sheet of thin flexible liquid proof paper with liquid proof seams, or can be of other forms and constructions within the skill of the paper bag maker, to meet the requirements of my invention.

As an example of a satisfactory embodiment of a liquid carrying paper bag for the purposes of my invention, I show a bag 2, folded up to conical or truncated cone form from a flat approximately circular liquid proof imperforate sheet of paper 2a, of the required characteristics approximately as herein set forth. This sheet of strong thin paper 2a, is creased or otherwise provided with central circular fold line a, and with fold lines b, c, extending from circular line a, to the edge of the sheet, all so arranged that the sheet can be folded up from circular line a, and gathered by tapering overlying tucks and folds into an upstanding upwardly contracting conical wall 2d, from the circular center of the sheet which constitutes the flat bottom 2b, of the liquid tight paper bag thus formed which at its upper end provides an open mouth.

The bag is so formed that its taper, or its diameter, if cylindrical, approximately conforms to the taper of the protective carrier, or to the internal diameter of the carrier if cylindrical, for which it is adapted. The bag is made over-short at its lower end and over-long at its upper end with respect to the car-

rier for which adapted, so that when the bag is expanded to operative form it can be inserted upwardly through the lower or large end of its carrier to a position therein with the bag bottom inset upwardly within the lower end of the carrier and with a substantial length of the open upper end 2e, of the bag projecting upwardly from and above the upper end of the carrier. The upwardly projecting upper or mouth end 2e, of the bag is then expanded outwardly and rolled or folded outwardly over the top edge of the carrier and down and pressed to the exterior surface of the carrier so as to exteriorly and annularly surround the upper end of the carrier. The mouth end of the bag is thus, in effect, hooked over the annular upper end of the carrier, and this is possible without severing or breaking the paper of the mouth end of the bag because of the tucks and folds therein which will expand to permit enlargement of the mouth over the carrier top edge.

When the bag mouth has thus been expanded over the carrier top and turned down around the exterior thereof, said bag end is permanently secured to the carrier end in such manner that the bag is supported from its upper end and thus suspended in the carrier, and maintained by the attachment between its upper end and the upper end of the carrier.

In the example shown, the flared down turned upper end 2e, of the bag is tightly clamped or clipped on the upper end of the rigid carrier by a metal ring 5, that provides the container with an exterior enlarged rim 5a, and a neck or mouth ring providing a depressed or interior annular seat 5b, for a flat closure disk 6, or so-called milk bottle closure cap, located within the open upper end or mouth of the flexible sheet bag.

The annular radially enlarged rim 5a, adapts the container to receive and retain the flanged paper hood caps of commerce, that will entirely enclose and cover the container head and its rim.

The particular metal clip or ring 5 shown is in the form of a downwardly opening trough, inverted U-shape in radial section. This trough like ring is in application, forced down on the upper end 2e, of the bag 2, expanded over the upper end of carrier 1, and the end 2e, is thereby clamped tightly down on the top edge of the carrier and against the outer surface thereof, and thereupon the ring is pinched or deformed to force its rim forming outer flange 5a, to tightly grip the depending portion of the bag end against the exterior surface of carrier 1, to effect the liquid tight bag securing joint between the bag end and carrier.

After the bag 2, has been fitted in the carrier and at its upper end secured to the upper end of the holder, the bottom closure 4, can be pressed into place resting on the

supporting lugs 1a, to protect the bag from below, and if need be to receive the bottom of the bag loaded with liquid and support the same in flat form, and thus maintain the tapered form of the bag.

The longitudinal walls of the paper sheet when folded in bag form are greatly strengthened by reason of the overlying folds and tucks therein for expanding and securing purposes at the upper end thereof and for load carrying purposes throughout the length thereof.

The carriers, as heretofore explained, can be nested for packing and shipment. The bags can also be packed and shipped in flat form. The rings 5, can also be separately packed and shipped.

By the employment of simple and easily understood and operated mechanism at the dairy or other bottling station, the carriers, bags, and rings can be assembled and the rings deformed to securely clip the bags and carriers together, and also to reduce the bag material from flat form to operative liquid retaining bag form.

When the carrier, bag, and ring are assembled to complete container form, the bags can be filled and capped by common or other filling and capping machinery, because of the presence in the container, of the rigid exterior protective carriers. The liquid filled containers can be safely and conveniently handled, transported, and packed with ice, because of said rigid carriers which can be grasped tightly by the hands without danger of crushing, collapse or distortion.

It is evident from this disclosure, that the stiff strong protective carrier 1, can have either one or several separate windows through which the liquid carrying bag 2, can be inspected, and through which the bag contents can be observed by reason of the approximate transparency of the bag material, particularly if the carrier is provided with opposite windows for the entrance of light.

It is within my invention to mold the flexible liquid retaining bag 2, (whether or not its upright surrounding wall is made up of folds or pleats 2d) as a one-piece liquid tight flexible film of durable material of the required tensile strength, such as gelatin-like material, viscose, cellulose acetate, nitro-cellulose. A bottomed flexible bag composed of film-like material, can be combined with the protective carrier 1, and supported therein from the upper end thereof with the upper or mouth end of the bag secured to the upper of the carrier or otherwise within the spirit and scope of my invention.

It is also within certain generic features of my invention, to secure the open mouth end of the thin wall flexible liquid retaining bag to the upper end of the protecting carrier by the annular clip, adhesive, staples, or

otherwise, without necessarily turning the upper end or mouth wall of the bag outwardly over the top edge of the carrier.

What I claim is:—

1. A transporting container, including a strong non-collapsible stiff tubular carrier of molded fibrous pulp and permanent form; having a separate resilient flat disk inset bottom; a flexible collapsible liquid carrying bag depending in said carrier with the bag bottom resting on said carrier bottom, whereby the bag is distended laterally within the carrier by the liquid contents of the bag, the upper end of the bag being permanently opened at the stiff upper end secured and sealed around the open bag mouth to the stiff permanently formed annular top of said carrier, means being provided to receive an independent closure for sealing and opening said bag mouth, said rigid tubular carrier, before assembly with the bag and bottom disk, being open at both ends and longitudinally conical for nesting.

2. A transporting container, including a stiff rigid non-collapsible tubular carrier of permanent form and dimensions; a flexible collapsible liquid carrying bag suspended in said carrier from its upper end, a permanent mouth ring permanently securing the upper end of said bag around its open mouth to the upper end of said carrier, and forming the permanent top mouth of the carrier and bag adapted to receive and retain an independently removable closure, and a resilient bottom closure disk, the open lower end of said carrier being internally formed to uphold said closure disk inserted when flexed longitudinally of the carrier upwardly in said lower end, said closure disk adapted to uphold the lower end of said bag within the carrier for radial bag expansion within the carrier under the action of the liquid contents.

3. A flexible collapsible liquid holding bag, in combination with an elongated tubular carrier of permanent stiff non-collapsible form, said bag being suspended in said carrier from its upper end, a mouth ring pinched on the upper ends of said carrier and bag and permanently securing the same together and constituting the permanent open top rim of the carrier surrounding the open mouth of the bag and adapted to receive a separate independent closure for said mouth, and a resilient bottom closure disk, said rigid tubular carrier being tapered for nesting and open at both ends before assembly with said bag, ring and disk, said carrier having an integral rigid formation internally of its large bottom end opening to uphold said disk therein when forced longitudinally into said end and past said formation.

In testimony whereof I have hereunto set my hand at Fulton, New York, this 20th day of June, 1929.

WILBUR L. WRIGHT. 130